

What is claimed is:

5 SUB B¹⁶ 1. A method of communicating on a network medium, comprising:
forming a frame in software;
transmitting the frame to a network medium interface device which has a pair
of media access controllers (MACs);
determining a selected MAC of the MACs which is to be used to transmit the
frame; and
transmitting the frame onto the network medium using the selected MAC.

10 2. The method of claim 1, wherein the determining includes the network
medium interface device checking the frame for embedded MAC selection
information.

3. The method of claim 2, wherein the checking includes checking the frame
for a first bit which indicates whether the MAC selection information has been
embedded.

15 4. The method of claim 3, wherein the determining includes, if the first bit
indicates that the MAC selection information has been embedded in the frame,
checking a second bit of the frame, and using a value of the second bit to determine
the selected MAC.

20 5. The method of claim 2, wherein the determining further includes, if the
frame does not contain the embedded MAC select information, querying a node
discovery block for node capability information regarding a destination node of the
frame.

6. The method of claim 5, wherein the querying includes obtaining from the frame a destination address corresponding to the destination node, and passing the destination address to the node discovery block.

7. The method of claim 6, wherein the passing the destination address includes passing the destination address to a file retrieval sub-block of the node discovery block.

8. The method of claim 7, wherein the querying further includes the file retrieval sub-block searching a cache sub-block of the node discovery block for the node capability information regarding the destination node of the frame.

9. The method of claim 5, wherein the determining includes making a default selection between the MACs if the frame does not contain the embedded MAC select information and if the node discovery block does not contain node capability information regarding the destination node of the frame.

10. The method of claim 1, wherein the forming includes embedding in the frame MAC selection information regarding a destination node of the frame, if the software has available to it node capability information regarding the destination node.

11. The method of claim 10, wherein the embedding includes setting a first bit of the frame to indicate that the MAC selection information has been embedded, and setting a second bit of the frame to indicate which of the MACs is the selected MAC.

12. The method of claim 1, wherein the transmitting includes passing the frame through an intervening device between the software and the network medium interface device.

13. The method of claim 12, wherein the intervening device is a system MAC.

14. The method of claim 12, wherein the passing the frame through the intervening device includes the intervening device checking the frame for embedded MAC selection information, and, if the frame does not have the embedded MAC selection information and the intervening device has available to it node capability information regarding the destination node, embedding the embedded MAC selection information in the frame.

15. The method of claim 1, wherein the network medium includes telephone lines.

16. A method of communicating on a telephone line network medium, comprising:

forming a frame in software, the forming including embedding in the frame MAC selection information regarding a destination node of the frame, if the software has available to it node capability information regarding the destination node;

transmitting the frame to a network medium interface device which has a pair of media access controllers (MACs);

determining a selected MAC of the MACs which is to be used to transmit the frame, the determining including:

using the network medium interface device to check the frame for embedded MAC selection information;

if the frame has the embedded MAC selection information, using the MAC selection information to determine the selected MAC; and

if the frame does not contain the embedded MAC select information, querying a node discovery block for node capability information regarding a destination node of the frame, and using the node capability information to determine the selected MAC; and

transmitting the frame onto the telephone line network medium using the selected MAC.

17. The method of claim 16, wherein the embedding includes setting a first bit of the frame to indicate that the MAC selection information has been embedded, and setting a second bit of the frame to indicate which of the MACs is the selected MAC.

18. The method of claim 17, wherein the checking includes checking the frame for a value of the first bit.

19. The method of claim 18, wherein, if the first bit indicates that the MAC selection information has been embedded in the frame, the using the MAC selection information to determine the selected MAC, includes checking a second bit of the frame, and using a value of the second bit to determine the selected MAC.